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THE PLANT DISEASE REPORTER

ISSUED BY THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

Volume XII **Number 3**

June 15, 1928

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT DISEASE SURVEY OF MONTANA

By P. A. Young

A plant disease survey is being made this summer in Montana. It is conducted with cooperative support from the Montana Agricultural Experiment Station and the Bureau of Plant Industry of the U. S. Department of Agriculture. The first survey trip covered 792 miles through the winter wheat section of the central part of the state at the end of May.

WINTER WHEAT (Turkey Red, Karmont and Montana 36)

Thirty-seven fields aggregating 1,780 acres were inspected for diseases and abnormal conditions. The most serious abnormality was a dying of the lower leaves and a chlorosis of the upper leaves. Associated abnormalities in the living leaves were mottling, chlorotic streaks, and sterile brown leaf spots. These latter symptoms occurred prominently in only about half of the fields showing injury from leaf dying, so cannot be regarded as a cause of the main trouble. Examination of fields and consultation with agronomists gave credence to their explanation that the causes are physiological. The affected wheat was planted in July and early August, which was 2 to 4 weeks too early. Extensive growth in the fall, renewed growth in March, severe freezing in April, and an injurious drouth in May appear to be the chief causes resulting in the dying of the lower 25 to 35 per cent of the leaves in most of the fields examined. The crops are already damaged, but will still be profitable if there is sufficient rain during the first weeks of June.

Scattered pustules of Puccinia triticina were seen in two fields near Lewistown, but not elsewhere. Mr. W. L. Popham, State Leader in Barberry Eradication, inspected wheat as far east as Baker, but found rust only around Billings, where scattered pustules were seen.

One field of Kharkoff wheat at Huntley had a severe infestation of Erysiphe graminis about May 20. Subsequent dry, hot weather caused most of this mildew to disappear. This report and the correlated specimens were supplied by Mr. A. E. Seamans, who has charge of the dry land farm at the Huntley Experiment Station.

Many of the inspected wheat fields showed no traces of disease.

ALFALFA

Thirty-two fields of alfalfa aggregating 610 acres were inspected on this trip. No diseases were found to be doing serious damage. Peronospora trifoliorum was found in 10 fields. Two fields near Big Timber and Columbus showed 100 per cent infestation with spots on 1 to 10 leaves per plant. The disease was not yet very serious in these fields, and occurred only as traces in the other fields.

In 16 fields leaf spots (chiefly caused by Pseudopeziza) occurred on 0.1 to 100 per cent of the lower leaves of the alfalfa. They were usually associated with yellowed lower leaves, but some fields with dense stands had leaves yellowed by shading and bearing no visible fungi, so these leaf spots were not serious.

Traces of alfalfa mosaic were seen in one field near Billings.

G. A. Rassley sent in specimens of Albino alfalfa from Huntley. I did not see any on the trip.

Alfalfa white spot was found in a field near Helena, affecting about a dozen plants. They occurred only in soil wet by irrigation water, and bore symptoms like those described by Dr. B. L. Richards. He showed me many specimens collected in Utah. Other specimens of this disease were sent to the laboratory from Big Timber.

Tip burn of alfalfa was found on about 1 per cent of the plants in part of a field near Helena. The plants were badly injured. The cause is unknown.

SWEET CLOVER

Severe mosaic associated with brown leaf spotting was found in yellow sweet clover plants growing along an irrigation ditch near Helena. Four fields inspected showed no diseases.

Rye

Three fields of rye showed no diseases.

PEAS

Two fields of peas showed no diseases.

CROWN ROT AND WILT OF ALFALFA

Kentucky: Considerable dying of alfalfa occurred the past winter in Pendleton County and neighboring counties. The crown shoots and buds were partly or totally killed, the top of the root gradually rotting in plants with all crown buds killed. The injury appeared to be of pathogenic origin and not due to winter injury. (Valleay, June 15)

Wisconsin: My general estimate is that over half of the alfalfa was killed out because of lack of snow cover and complication with wilt in some sections. (Vaughan, June 2)

Fig. 1. Alfalfa Winter Injury. Summary of County Agents' Reports, June 2, 1928. (R. E. Vaughan)

Kansas: Wilt appears to be more prevalent here than at any time since its discovery. Many plants, in fact whole fields, have gone out over winter, apparently due to wilt. The wet summer last year probably provided conditions suitable for abundant infection and many of the plants failed to survive the winter. We were also interested to learn if the application of fertilizer affected the prevalence of wilt. Thus far, there is little or no evidence that the prevalence of wilt is influenced by fertilizers. Grimm, which is probably the most winter-hardy variety grown at all extensively, is also one of the most susceptible to bacterial wilt. There is some evidence of resistance in three strains of imported alfalfa although much remains to be done to prove this. Bacterial wilt is by far the most important disease of alfalfa in this section of the country. (J. L. Wimer, in The V. and F. Pathologist 1 (12). June 1, 1928)

REPORTS ON DISEASES OF CLOVER AND SWEET CLOVER FROM KENTUCKY

Powdery mildew (Erysiphe polygoni) was well started on red clover at Campbellsville, May 20. None has been observed so far at Lexington.

Leaf spot (Cercospora sp.) on sweet clover is causing some defoliation on the Experiment Station farm.

Mosaic (virus) abundant on Experiment Station Farm in second year plants. (Vaughan, June 15)

TYLENCHUS DIPSACI ON OATS

What seems to be the first authentic report of the occurrence of the stem nematode (Tylenchus dipsaci) on oats in this country has been received with specimens from H. E. Thomas from California. The determination of the organism was verified by Dr. G. Steiner. The disease is well known in some of the European counties. It occurred on a 100 acre ranch in Santa Cruz County and was stunting and killing the plants in several spots involving a total 10 - 15 acres.

NET BLOTCH OF BARLEY

Wisconsin: Net blotch (Helminthosporium teres) is quite prevalent on seedling barley. We have seen considerable of it in Madison and have some reports from Brown County which indicates that it is quite widely distributed. (Vaughan, May 26)

DISEASE AGAIN THREATENS UTAH POTATO CROP

"I have just returned from a survey trip through the southern part of Utah especially to learn of the possible occurrence and distribution of the new trouble on potatoes which we have chosen to call psyllid yellows. I regret keenly to be forced to report that this disease has now swept rather completely the very earliest potato district of the state. Washington County, especially around St. George and Santa Clara, shows a very high percentage of the disease. In many fields as high as 75 per cent of the potatoes are virtually gone. I was also able to locate the trouble on a few of the early potatoes of Davis and Salt Lake Counties, indicating that the disease has gotten an early start.

"In all of these areas the potato psyllid, Paratrioza cockerelli, is closely or completely correlated with the disease. There exists no doubt in our minds but that this insect is the distributing factor in the situation. Our hopes that the insect would not live over in the northern counties has been completely shattered as we find both insects and the eggs in abundance on the ground cherry and matrimony vines in Cache Valley, ready to attack the first potato plants which appear above the ground."(Richards, June 1)

FLORIDA TOMATO DISEASES

G. F. Weber has submitted the following report on Florida tomato diseases as of June 1:

Mosaic (undet.) Abundant as usual on west coast. Slight infection on lower east coast; important in the state.

Early blight (Alternaria solani). Common but not as destructive as usual due to dry weather.

Bacterial spot (Bacterium vesicatorium). More prevalent than ever before. Centered in the tomato section on the west coast. Almost as bad as nailhead this season in that locality.

Southern blight (Sclerotium rolfsii). Not common on early crop. Usually severe during late spring and early summer.

Wilt (Fusarium lycopersici). Very important in the state especially along west coast and in central portion causing considerable damage.

Nailhead (Alternaria sp.). Practically none on late tomatoes on east coast but common on west coast. Weather conditions very important in relation to prevalence.

Leaf mold (Cladosporium fulvum). Common but not destructive in any way.

Buckeye (Phytophthora terrestris). Not as common as last year. Appeared only in low places in scattered fields.

Soil rot (Rhizoctonia solani). Very little found in comparison with previous years.

Ripe rot and leaf spot (Phoma destructiva). Prevalent in seed beds on fruit in packing houses about as much as last year.

F. J. Pritchard in the Vegetable and Forage Pathologist (1 (12): June 1, 1928) writes as follows concerning mosaic and yellowing of tomatoes in Florida:

"Tomato mosaic was fairly common in a number of fields in Dade County this year, although only a trace of it had been found there previously. Nightshade is common in this region, but nightshade and other plants in the old seed beds and in fields not planted with tomatoes, were free from it, while a few of them in the tomato field were affected. This seemed to indicate that it was spreading slightly from the tomato to these plants. There was very little pokeweed in the Everglades and that which I found was free from the tomato mosaic."

"There was considerable yellowing of the tomato plants in the Everglades. This was accompanied by poor growth and low yields. The foliage of these plants was very finely mottled, quite different mottling from that of mosaic. The leaves were not reduced in size nor irregular in shape as in the case of mosaic. This yellowness extended to the tops of the plants and was very pronounced in fields heavily fertilized, but almost absent in those receiving a relatively small amount of fertilizer. As the past two years have been very dry and the Everglades have not been flooded during the summer, and there has not been much leaching, the trouble is probably due to the use of too much fertilizer in these dry soils. It may be partly due to drought, however, but the plants do not have quite the same appearance as those injured by drought."

TOMATO YELLOWS

Utah: The southern tomato areas are suffering from the western yellow blight of tomato or as Shapavalov calls it "tomato yellows". Counts were made of fields showing as high as 42 per cent of this trouble. Never before have the people in that district witnessed its appearance at such an early period. (Richards, June 1)

REPORT ON POTATO DISEASE SITUATION FROM ARKANSAS

The following report has just been received from Collaborator H. R. Rosen of Arkansas:

Tip and margin burn (leaf hopper). Extremely abundant on Bliss Triumph variety and causing much damage. Leaf hoppers are very common on the plants.

Rugose mosaic (undet.) About 25 per cent of a 20 acre field near Ft. Smith has been noted as showing the rugose mosaic disease with extreme type of leaf crinklings and curlings; some mottling and yellowing of some of the lower leaves.

Leaf roll (undet.) Some few cases that could be definitely assigned to leaf roll have been detected in a field of Nebraska-grown seed of the Bliss Triumph variety. Disease as a whole is not common but very severe in its action on any one plant.

Blackleg (Bacillus phytophthorus). More common and destructive this year than at any time during the past 10 years, probably due to the extreme amount of cool, wet weather. Ordinarily this disease is of little importance in this state.

Scurf and rosette (Rhizoctonia sp.) This disease is unusually common this year, and on plants of treated as well as untreated seed and on certified as well as non-certified seed. The rosette stage of this disease has been sent in for identification from various parts of the state and has been observed by me in the Ft. Smith potato region. This stage of the disease, like blackleg, is very rare with us and its frequency this year may be correlated with the unusual weather conditions.

FLORIDA TRUCK CROP DISEASES

G. F. Weber has sent in the following reports on diseases of a number of truck crops in Florida (June 1):

Bean: "Bacterial leaf spot (Bacterium phaseoli) more serious in central portion. Much worse than previous years. Fifty per cent loss in Gainesville section, partially due to wet weather. Anthracnose (Colletotrichum lindemuthianum) common on leaves and pods in southern and central part of state, severe losses local. Hollowstem (Rhizoctonia solani) very common and destructive."

Peas: "Powdery mildew (Erysiphe cichoracearum) common and of considerable importance. Blight (Ascochyta pisi) exceptionally destructive in certain scattered fields."

Peppers: "Southern blight (Sclerotium rolfsii) very important on muck land especially on late spring stems and fruits touching ground. Bacterial spot (Bacterium vesicatorium) not as common as last year but nevertheless important. Mosaic (undet.) common and of considerable importance. Yields reduced."

Cucumber: "Downy mildew (Pseudoperonospora cubensis) appeared early in the year in southern part of state progressed northward. First appearance Gainesville May 10. Plants all killed June 10. Leaf spot (Bacterium lachrymans) very common in north central section. Fifty per cent loss in some fields. Anthracnose (Colletotrichum lagenarium) not common but severe in scattered fields. Powdery mildew (Erysiphe sp.) not as common as last year. Very little loss. Root knot (Caconema radicicola) very common and in most fields some plants were severely stunted or killed in seedling stage. Mosaic (Undet.) more frequently found than last year. Usually accompanied by aphis infestation."

Watermelon: Anthracnose (Colletotrichum lagenarium) not as prevalent as last year. Infection exceedingly light. Causing little damage so far. Wilt (Fusarium niveum) probably as much as in previous years. Always a factor in production. Gummy stem blight (Mycosphaerella citrullina) not common nor as prevalent as last season. Found in few fields."

TOBACCO WILDFIRE AND ANGULAR LEAF SPOT

Angular leaf spot (Bacterium angulatum)

Kentucky: Inspection of plant beds in the vicinity of Lexington indicates that infection is nearly always present. The usually recommended precautions for control have not prevented the appearance of disease in the beds. In some instances where great care has been used to eliminate all possible sources of infection from seed, canvas and trash, the disease has appeared and seems to be associated with over plowed areas in the bed, suggesting that the infection has been washed in possibly from native hosts. No wildfire or Wisconsin spot has been seen so far this season. (Valleau)

Wildfire (Bacterium tabacum)

Massachusetts: I found wildfire May 28 in two tobacco seed beds out of ten examined. These two seed beds had not been sprayed or dusted. (Doran)

FURTHER REPORTS ON APPLE SCAB (VENTURIA INAEQUALIS)

New York: (Reports from Weekly News Letter, Dept. Entom. & Plant Path., State Agric. Coll. June 11):

Orange Co.: Apple scab may be found in almost any orchard in the county. In some orchards that were poorly sprayed a high percentage of scabby leaves and fruit can be found. Primary infection probably took place during the rains that fell during blossom time. (Sidney Jones)

Dutchess Co.: Scab is showing up in considerable amounts. A Martha crab shows 100% infection. One dusted orchard shows scabby leaves on Greenings (R. I), Baldwins, Kings, Newtown Pippin, McIntosh and Ben Davis. Some sprayed orchards also show considerable scab. Of the 242 perithecia examined, 96 contained some spores, many others were small and many were entirely empty. (Ray Bender)

Ulster Co.: Apple scab has been found in every orchard examined during the week. The most serious infections seem to be located in the Ulster Park section where leaf counts ran as high as 50% on McIntosh. In unsprayed orchards the percentage runs much higher. Leaves are curled and browned while the young fruits are badly scabbed. Probably most of this infection took place during the rainy period of May 18-22 at which time the trees were in full bloom and much new growth had been made. The amount of scab seems to be less in orchards sprayed with lime sulfur where leaf growth had been retarded in comparison to dusted orchards or those where dry-mix has been used. Ideal scab conditions have existed this week. Steady rains beginning on the evening of June 4th continued until late afternoon of the following day. Rain fell nearly all day on the 6th. There was little sunshine until the following afternoon. Many are now spraying or dusting scab susceptible varieties. (E. J. Hambleton).

Greene Co.: So far only a small amount of infection has developed on the fruit of apples. (A. S. Mills).

Columbia Co.: Very prevalent on foliage. (A. B. Buchholz).

Clinton Co.: Young apple scab lesions have been found during the past week, in every orchard visited. They are most abundant on the upper surfaces of the leaves and on leaves that have developed recently. The lower surfaces of the first leaves to develop are almost free from lesions, indicating that the primary infection occurred late - probably during the blossoming period. The situation is very serious in most orchards. The foliage was continuously wet from Tuesday morning, June 5th until Thursday morning June 7th, making about 49 hours in all with the temperature between 50 and 60 most of the time. A majority of the growers

started the petal-fall spray Monday and a few completed the operation that same day. A few used dust to complete the application ahead of the rain, but many were caught without protection. (A. B. Burrell).

Onondaga Co.: Apple scab was noticed in abundance on unsprayed McIntosh leaves, Monday June 4th. Wednesday visiting several unsprayed orchards, scab infection was prevalent on most all varieties. Heavy scab infection was also observed on Ben Davis which the owner claims were sprayed thoroughly. As a rule, scab lesions are hard to find in well sprayed orchards. The infection on the Ben Davis most likely occurred during blossoming. Emergency scab and curculio warning was sent Thursday. (W. E. Fields).

Erie Co.: In unsprayed orchards infection was already taken place and the effects can be seen on the leaves. (M. N. Taylor).

Genesee Co.: First observed on a few unsprayed trees on June 7th. A few rows in a Greening orchard which were sprayed with a 3 per cent lubricating oil emulsion on May 28th showed considerable foliage injury. (R. L. Payne).

Ontario Co.: Plentiful in orchards where the pink spray was omitted or poorly applied. Further infection probably took place during the 5th and 6th when the foliage was kept wet for two days and one night. (C. K. Bullock).

Wayne Co.: Orchards which did not get a thorough cover before the rain of May 17, 18 and 19 show considerable scab infection. A scab cover spray will be recommended for the first of next week. (E. E. Frane).

Monroe Co.: Becoming more abundant. (R. C. Coombs.)

Orleans Co.: The 2 1/2 day rain this week caught many of the growers unawares. Apple orchards more than 3 or 4 miles from the lake were fairly well sprayed while orchards near the lake were mostly unsprayed. A heavy apple scab infection must surely have taken place. (R. G. Palmer).

Niagara Co.: Most varieties of apples are setting well including those Baldwins which blossomed this year. Baldwins will probably be about a half crop. The early scab lesions on the underside of the leaves proved to be of rather widespread occurrence although much more common near the lake. Later infections from the rain during the pre-blossom period are common and fairly numerous in some orchards. (W. E. Blauvelt).

Virginia: A trip of inspection was made on Monday, May 28, from Winchester to Staunton and points intermediate. The most scab was observed at Staunton. In the Winchester section no scab has been found to date (May 30). It is quite probable that we shall have a very slight infection, similar to that of the past two years. The general crop situation is excellent. Frederick County will have a normal crop this year. (F. J. Schneiderhan, May 30).

Illinois: Apple scab is not prevalent in the main apple growing sections of the state. This is due to the rather dry spring weather. In the extreme southern section, it is more serious than usual. Pedicel infection is extremely common. On unsprayed trees, fruit infection was observed to be very severe. Reports received from other sections indicate that blossom blight due to apple scab was somewhat common. This condition was not observed in the sections where I have been. A frost condition somewhat similar to this has been observed in some of the orchards. In this case, the blossoms were not killed at the time of bloom, but withered shortly after and black areas at the base of the pedicel were observed which were not due to fungi but apparently were due to direct freezing of the tissues at that point. This resulted in the abscission of pedicels. Crinkled leaves at the base of the fruit spurs, together with blistered epidermis, indicates that the foliage was also quite seriously injured. Temperatures as low as 24 degrees were experienced during the blooming of the apples. (H. W. Anderson, May 29.)

Michigan: The severity of apple scab varies considerably in different parts of the state but in general the infection has been light. In the central part of the state, many of the ascospores were discharged before the trees were susceptible to infection. In the southwestern part of the state the spores were discharged during local showers and little infection resulted. (C. W. Bennett, June 7.)

Arkansas: Abundant on foliage and fruits of unsprayed trees. Considerable on foliage in some sprayed orchards. Wet, cool weather in late spring apparently very favorable to foliage infection but excellent weather conditions during period of application of early scab sprays seem to have resulted in good control. (V. H. Young, June 15.)

BLIGHT (BACILLUS AMYLOVORUS) OF APPLE AND PEAR

North Carolina.: The blooming period of pears and apples throughout the state was delayed seven to fourteen days this year. The rainfall was constant and above normal for the same period and for several weeks later. These two conditions were favorable for the dissemination of the causal bacterium, infection and severe blighting. The disease is much worse than during the past five seasons and probably any previous year. The infection was through the flowering parts,

since there is very light twig infection except where the organism has worked into the twigs from the spurs. Fruit on infected spurs continues to develop the disease, where masses of bacteria oozing from the lenticels are very prominent. These remain as a grayish deposit when dessication takes place. The destruction of twigs and wood has been very rapid, since in some orchards large limbs and young trees have been destroyed. The disease is severe on trees grown on extremely acid sandy soils, on nearly neutral clay soils, on well cultivated and on neglected trees. There seems to be no difference in the loss of fruit or the death of wood on any soil type. The loss of fruit on the Winesap variety has been very significant this year since in the two previous seasons there was no infection of this variety along with the Delicious which is not affected again this year for the third consecutive season. The San Jacinto, Red June, Yates and Bonum varieties are badly blighted and have been for the past three seasons in the same orchard. The disease is most destructive on the eastern and southern exposures. On some of the susceptible varieties there is a total loss on some limbs, while others show from to 85 per cent blighting of spurs. It is now apparent that blight will greatly reduce the apple yield in this state, although other conditions have been very favorable for an excellent crop. (R. F. Poole).

Florida: Very destructive on pear this year. Worse than last year. Most trees show infections. (G. F. Weber, June 1.)

Illinois: It is probable that there is less fire blight in the southern end of the state than has ever been known before. In a recent trip through the main fruit section of the southern and western portions of the state, it was found extremely difficult to find any blight at all. During the blooming period of both peaches and apples, no blossom blight was observed. Blight was observed starting on pears near Anna on May 24. It had previously been seen on pears at Elberta during the first week in May. (H. W. Anderson, May 29.)

Michigan: Fire blight cankers were active on apple at East Lansing May 11. As a rule, blossom infection in both apples and pears has been light. One orchard of ten acres of 8 year old pear trees has been observed, however, in which at least 60 per cent of the blossoms were blight and many of the twigs were beginning to have distinct symptoms of disease by June 1. Some of the trees had also been practically girdled by this season's advance of the organism. (C. W. Bennett, June 7.)

Arkansas: Very destructive on pears this year, much more so than usual. (H. R. Rosen, June 15.)

Common and destructive this year, much more than in average years. (H. R. Rosen, June 15.)

California: C. F. Kinman in a letter to H. P. Gould of the Office of Horticulture, Bureau of Plant Industry, states that on April 24, in the pear growing region of the lower Sacramento River Valley, California, he saw many old Bartlett trees very seriously affected with blossom blight. One old tree had over 1200 infections by actual count. Practically all trees in the closely planted block of a few acres appeared to be almost as seriously affected. These trees while old are not large and have made only a moderate growth during the past few years. Of late they have been only lightly pruned and there are but a few shoots on them now. As the trees bloomed profusely a large percentage of the spurs have been killed by the blight.

The above is not an isolated case. Many plantings of old slow growing trees are seriously if not disastrously affected. Blight is not unusually serious in nearby orchards of younger trees. Probably the older slowly growing trees blossomed at a little different time than the younger trees and at a time when conditions were more favorable for the spread and development of blight. Some growers are paying from $4.00 to $6.00 a day for blight cutters. A man is able to remove blight from only 3, 4, or 5 trees per day. I noticed that there was some blight still on the tree when the blight cutter had finished with it. With the ravages of blight and black end many pear growers are becoming discouraged about their orchards.

FROST INJURY TO APPLE

In addition to the statement from H. W. Anderson of Illinois, quoted under apple scab, the following interesting report of frost damage in Michigan has been received from C. W. Bennett:

"Frost has again killed a number of blossoms in a few orchards in Berrien County. In one orchard all of the blossoms were killed up to a level with the tops of the trees in the lowest places in the planting. The condition of the blossoms indicates that two freezes were involved, one when the buds were in the prepink stage and one when the trees were in full bloom. The second freeze killed a great many of the young twigs. Both the shoots and the blossoms closely resemble those affected by fire blight. The Duchess seems to be especially susceptible to this type of frost injury. (June 7.)

OTHER REPORTS ON APPLE DISEASES

Illinois: "Apple blotch Phyllostiota solitaria) found at Ozark, Illinois, on May 24, but very rare." (Anderson, May 29.)

Virginia: Cedar rust (Gymnosporangium juniperi-virginianae): "Very little cedar rust is developing thus far. In fact, the infection to date is the slightest in six years. Lack of rainfall accounts for this." (Schneiderhan, May 30.)

Arkansas: "Extremely abundant on cedars and favorable long spells of wet weather favored infection. Appearing abundantly on susceptible varieties near cedars. (V. H. Young, June 15)

BACTERIAL SPOT (BACTERIUM PRUNI) SEVERE ON PEACH IN NORTH CAROLINA-

North Carolina: Peach bacteriosis has been causing some damage in the principal peach growing areas of this state for a number of years. The growers have reported greater damage some seasons than in others. The disease is causing severe damage this year. It was observed April 20th, a very early date, and has since advanced so rapidly that serious defoliation has taken place on trees of Early Rose, Elberta, Hale and Bracket in some orchards. It is the opinion of experienced growers that if the heavy premature defoliation continues, the trees will go into the winter in a very susceptible condition for winter injury, which has destroyed thousands of trees in the acid soils of the sand hills during the past five years. In some orchards the fruit of the Early Rose, Hale, Elberta and Bracket varieties is already badly marked. The severely infected peaches exhibit large scab like lesions from which gum has oozed. At this date, more than a month before the Elberta will be ready for shipment, the outlook is not bright for an excellent market package, since in some orchards there is more than 75 per cent of fruit diseased. In other orchards the disease has not caused serious damage on any variety. The Georgia Bell and Hilly varieties are only slightly affected. In view of the fact that Bacteriosis does not affect the edible quality of the fruit our growers will probably advertise the otherwise excellent fruit for home market use this year. (R. F. Poole)

Illinois: The first observations on the bacterial spot of peach were made on May 24. Well developed lesions on the leaves were found at this time near Ozark, Illinois. The infection, at present, is very light. (H. W. Anderson, May 29.)

PEACH LEAF CURL (EXOASCUS DEFORMANS)

New York: Columbia Co.: Noticed bad infestation of leaf curl on some unsprayed peach trees while other unsprayed trees do not appear infested. Sprayed orchards are apparently uninjured. (A. B.Buchholz, May 28.)

Ulster Co.: Unsprayed orchards show 100 per cent infection. Leaves are already falling. Little found in well sprayed orchards. (E. J. Hambleton, June 4.)

Monroe Co.: Becoming more abundant. (R. C. Coombs).

Niagara Co.: Considerable has shown up, some orchards being severely infected. (W. E. Blauvelt).

Illinois: Peach leaf curl is not nearly so serious as it has been the last two seasons. It is locally severe. Very few commercial orchards of any importance show the disease. More abundant in the northern edge of the peach region, ie. north of Centralia. (H. W. Anderson, May 29).

Michigan: In general, leaf curl of peach is not causing much injury this season. The most severely affected area is a narrow strip along the shore of Lake Michigan. However, no orchards which have been observed have more than 10 per cent of the leaves affected. Through the middle portion of the Lower Peninsula there is a light infestation but in the southern part of the state, away from the lakes, very little curl has been found. (C. W. Bennett, June 7.)

Arkansas: First leaves appeared free of curl. Later weather conditions very cold and rainy. Many trees now show the unusual condition of having the first leaves free of "curl" while some later leaves are badly deformed. Probably little serious injury. (V. H. Young, June 15.)

Washington: At Oroville, slight importance. Reported only for record of occurrence under irrigation conditions. (D. F. Fisher).

ORANGE RUST (GYMNOCONIA INTERSTITIALIS) ON CANE FRUITS

E. W. Mendenhall reports that orange rust is prevalent on blackberries in Central Ohio. A specimen of black raspberry affected by orange rust was sent in from Wisconsin by R. E. Vaughan. The disease is prevalent on both blackberries and black raspberries in parts of Michigan according to the following report from C. W. Bennett:

"Orange rust in brambles is more prevalent this spring then it has been for a number of years. There is evidence of heavy spread of this disease in blackberries and black raspberries

in Van Buren and Berrien Counties since last spring. Plantings of all ages have been attacked. Infection apparently took place at or near the crown of the plants, probably in the buds which developed this season's crop of new canes. In the majority of plantings very few fruiting canes are affected, the disease being confined to the new shoots which are developing in large numbers. No rust has been found on black raspberry tips which were planted this spring though a number of fields have been examined in which the tips are known to have come from rather heavily infested plantings. In the older plantings rust is common enough to provoke considerable comment among the growers. Counts have been made in a number of fields which were rogued last year for virus diseases and rust and in nearly all cases where rust was present last year, either in the planting or on wild plants in the immediate vicinity of the planting, there has been a considerable increase. One five year old Mersereau blackberry planting of 400 plants from which 12 rusted plants were removed last year, had 194 plants affected with the rust this year. In this planting only five plants had any fruiting canes which showed signs of the disease. Adjoining this patch is a planting of 200 Eldorado plants in which only 4 plants were rusted. In a planting of seven year old Cumberland raspberries, 417 of the 1,472 plants present were affected. This field was rogued for orange rust last year after the first of July. (C. W. Bennett, June 7).

PLUM POCKETS (EXOASCUS SPP.) IN ILLINOIS

H. W. Anderson states that a number of reports had been received from northern Illinois indicating that plum pockets is unusually prevalent. (May 29).